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Richard J. Parr-Regn
Bereskin & Parr
Box 401
40 King Street West
Toronto, ON M5H 3Y2
CANADA

EXAMINER	
KRONENTHAL, CRAIG W	

ART UNIT	PAPER NUMBER
2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/972,856	KOOL ET AL.	
	Examiner	Art Unit	
	Craig W Kronenthal	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/10/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-8, 16-18, and 27 is rejected under 35 U.S.C. 102(e) as being anticipated by McSheery et al. (PN 6,324,296). (hereinafter McSheery)

Regarding Claims 1 and 27: McSheery discloses an image tracking apparatus for tracking the movement of an image of a corresponding moving object, the apparatus comprising:

- An optical identifier device (light point, Fig. 1, 106) which attaches to said moving object (module, Fig. 1, 102) and generates an optical identification signal (light,

Fig. 1, 104) (col. 14 lines 63-67). The light point (106) provides light (104) in pulses representing a binary identifier.

- An image capture system (Fig. 1) for receiving said image of said moving object (102) and said optical identification signal (104), and generating a coordinate position value related to said image of said moving object (controller, Fig. 1, 134) (col. 28 lines 19-22). The cameras (108) receive images of module (102) and send image data to the controller (134), which processes the data using a triangulation procedure shown in Figure 18 for determining the coordinates of the module in a 3D field of view.

Regarding Claim 2: McSheery discloses the image tracking apparatus as claimed in claim 1, wherein said image capture system comprises:

- A camera system (cameras, Fig. 2, 108) for receiving said image of said moving object and said optical identification signal, and generating a first and second series of image frames (col. 14 lines 32-34). Each camera (Fig. 1, 108) generates a separate set of image frames representing the moving object's position from different perspectives.
- A picture frame processing system (Fig. 1, 108 and 134) for processing said second series of image frames and generating said coordinate position value related to said image of said moving object (col. 29 lines 26-32). Each camera contains CCDs (Fig. 1, 112, 114, 116, and 118), A/D converters (Fig. 1, 120 and 124) and DSP's (Fig. 1, 126, 128, and 130), which are used to convert the

captured image frames into binary data. The controller (134) tabulates data from a number of cameras (Fig. 19) and uses this data to determine the coordinates of the moving object.

Regarding Claim 3: McSheery discloses the image tracking apparatus as claimed in claim 2, wherein said camera system comprises:

- A camera for receiving said image of said moving object and generating said first series of image frames (col. 14 lines 32-34). A camera (Fig. 1, 108) will capture image frames of a moving object (Fig. 1, 102).
- A second camera for receiving said optical identification signal and generating said second series of image frames (col. 14 lines 49-55). Each camera also determines the identifier by piecing together the binary outputs of the light (104), which represent the optical identification signal, from each frame. McSheery says the preferred embodiment has eight cameras (108), but the invention could have as few as one (col. 9 lines 14-20). Also Figure 2 shows the invention when two cameras (108) are used.

Regarding Claim 4: McSheery discloses the image tracking apparatus as claimed in claim 3, wherein said first series of image frames include broadcast quality images of said moving object (col. 15 lines 49-52). The camera's effective resolution of 2048x2048 is greater than the resolutions transmitted by television stations.

Regarding Claim 5: McSheery discloses the image tracking apparatus as claimed in claim 4, wherein said second series of image frames include optically filtered image frames (col. 11 lines 63-65). The image frames captured by all cameras would preferably be filtered by the band pass filter (Fig. 7, 704).

Regarding Claim 6: McSheery discloses the image tracking apparatus as claimed in claim 5, wherein said second camera includes a narrow band optical filter which receives said image of said optical identification signal and generates said optically filtered image frames (col. 11 lines 63-65). The band pass filter (Fig. 7, 704) is a narrow band optical filter. Furthermore, the image frames captured by all cameras would preferably be filtered by the band pass filter (704).

Regarding Claim 7: McSheery discloses the image tracking apparatus as claimed in claim 6, wherein each of said optically filtered image frames include images of only said optical identification signal (col. 11 lines 63-65). The infrared band pass filter (Fig. 7, 704) filters out the entire image leaving only the light points (Fig. 1, 106) radiating infrared light (Fig. 1, 104), which falls within the pass portion of the filter (704).

Regarding Claim 8: McSheery discloses the image tracking apparatus as claimed in claim 7, wherein said picture frame processing system includes a coordinate detector, which receives said optically filtered image frames and generates an X and Y coordinate position signal for said optical identification signal within each of said

optically filtered image frames (col. 28 lines 19-22). The controller (Fig. 1, 134) determines the 3D position of the optical identification signal or light (Fig. 1, 104) radiating from a light point (Fig. 1, 106). The optically filtered image frames produced by the cameras (Fig. 1, 108) are shown entering the controller (134) via serial signal paths (Fig. 1, 144 and 146). The controller (134) uses these frames in computing both X and Y coordinates as well as a Z coordinate.

Regarding Claim 16: McSheery discloses the image tracking apparatus as claimed in claim 2, wherein said camera system includes a camera device comprising:

- An optical splitter system (Fig. 1, 110) for receiving said image of said moving object (Fig. 1, 102) and said optical identification signal (light, Fig. 1, 104), and generating a first and second optical signal along a first and second orthogonal path (col. 10 lines 37-38). The optical system (110) is split into two systems (Fig. 5, 502A and 502B) contained in a single housing (Fig. 5, 500). The two systems effectively split the image into two optical signals portrayed by the two solid arrows (Fig. 5, unnumbered) running through the two systems (504A, 504B).
- A first camera device (502A) positioned along said first orthogonal path to receive said first optical signal and generate said first series of image frames (col. 10 lines 38-56). The first optical signal is sent through a series of lenses (Fig. 5, 504A, 506A, 508A, and 510A) before being sent to a CCD (Fig. 5, 112) and then an A/D converter (Fig. 1, 120) which outputs a first series of image frames.

- A second camera device (502B) positioned along said second orthogonal path to receive said second optical signal and generate said second series of image frames (col. 10 line 57 – col. 11 line 12). The second optical signal is sent through a series of lenses (Fig. 5, 504B, 506B, 508B, and 510B) before being sent to a CCD (Fig. 5, 114) and then an A/D converter (Fig. 1, 124), which outputs a second series of image frames. Also the second system operates along a second orthogonal path that is rotated 90 degrees with respect to the first orthogonal path.

Regarding Claim 17: McSheery discloses the image tracking apparatus as claimed in claim 16, wherein said optical splitter system comprises:

- A lens system for receiving said image of said moving object and said optical identification signal and producing a collimated optical beam (col. 12 lines 29-31). The lenses (Fig. 6B, 604 and 610) receive the image of the moving object (Fig. 1, 102) and the optical identification signal (Fig. 1, 104) and output a collimated optical beam (not labeled in Fig. 6A) to the CCD (Fig. 6A, 612).
- An optical beam splitter (Fig. 1, 110) for receiving said collimated optical beam and producing a first collimated optical output (Fig. 5, 111A) along said first orthogonal path (Fig. 5, 502A); and producing a second collimated optical output (Fig. 5, 111B) along said second orthogonal path (Fig. 5, 502B) (col. 12 lines 15-25).

Regarding Claim 18: McSheery discloses the image tracking apparatus as claimed in claim 17, further comprising a first and second focusing lens (Fig. 11, 1002), wherein said first focusing lens receives said first collimated optical output and produces said first optical signal; and said second focusing lens receives said second collimated optical output and produces said second optical signal (col. 12, lines 51-54). McSheery uses a cylindrical gradient index lens as the focusing lens (1002) and positions it immediately before the CCD (Fig. 11, 612) (col. 13 line 67 – col. 14 line 2). A focusing lens (1002) can be placed before each of a number of CCDs to receive a collimated optical output such as 111A and 111B depicted in Figure 5.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McSheery in view of DeMenthon (PN 5,227,985).

Regarding Claim 9: McSheery discloses the image tracking apparatus as claimed in claim 8, but does not disclose the X and Y coordinates being averaged. However DeMenthon discloses the image tracking apparatus as claimed in claim 8, wherein said

X coordinate position signal corresponds to a running average of X coordinate position values determined from each of said optically filtered image frames; and said Y coordinate position signal corresponds to a running average of Y coordinate position values within each of said optically filtered image frames (col. 11 lines 5-9). This modification would be obvious to one of ordinary skill in the art because both references pertain to the tracking of light sources attached to a moving object. One would be motivated to make this modification to provide more accurate coordinates of the position of the light sources to compensate for the cameras inability to focus the light onto just one pixel.

Regarding Claim 10: McSheery as modified by DeMenthon discloses the image tracking apparatus as claimed in claim 9. McSheery further discloses a picture frame processing system including a decoder, said decoder receiving said optical identification signal within each of said optically filtered image frames and generating an electrical decoder signal (col. 16 lines 17-26). The DSP (Fig. 1, 130) is responsible for decoding the ID. The DSP (130) receives each frame and when if finally determines the ID it generates an electrical signal to be sent to the controller (Fig. 1, 134).

Regarding Claim 11: McSheery as modified by DeMenthon discloses the image tracking apparatus as claimed in claim 10. McSheery further discloses a picture frame processing system including a graphics generator, said graphics generator receiving said electrical decoder signal and generating a graphic image containing information

associated with said image of said moving object (col. 18 lines 18-28). The PC (Fig. 1, 138) with the use of graphics software acts as the graphics generator.

5. Claims 12-15 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over McSheery in view of DeMenthon as applied to claims 9-11 above, and further in view of Rosser et al. (PN 5,264,933). (hereinafter Rosser)

Regarding Claim 12 and 28: McSheery as modified by DeMenthon discloses the image tracking apparatus as claimed in claim 11 which computes X and Y coordinates. However, neither reference includes a picture-in-picture processor. However, Rosser teaches a picture-in-picture processor which receives both said X and Y coordinate position signal and generates said coordinate position value (col. 8 line 68- col. 9 line 3). The image analyzer (Fig. 1, 17) acts as part of the picture-in-picture processor responsible for providing location information to an image synthesizer (Fig. 1, 20). It would be obvious to one of ordinary skill in the art to modify McSheery's PC (Fig. 1, 138) to include an image analyzer (17) to display the identifier information in a desired location. One would be motivated to make this modification for the purpose of adding advertisements, as is Rosser's motivation, or to provide information corresponding to the moving object that would appeal to viewers with little depreciation to the image aesthetics.

Regarding Claim 13 and 29: McSheery as modified by DeMenthon and Rosser discloses the image tracking apparatus as claimed in claim 12. Rosser further discloses the picture-in-picture processor receiving said broadcast quality images of said moving object and said graphic image, and superimposes said graphic image on said broadcast quality images of said moving object at a position related to said coordinate position value (col. 6 line 65- col. 7 line 10). The image synthesizer (Fig. 1, 20) acts as part of the picture-in-picture processor responsible for adding a secondary source (Fig. 1, 27) to select portions of a main image (Fig 2, 11 and 13). It would be obvious to one of ordinary skill in the art to modify the PC (Fig. 1, 138) of McSheery to display the identifier information along with the image of the moving object. One would be motivated to make this modification to the graphics software for the purpose of adding advertisements, as is Rosser's motivation, or to provide information corresponding to the moving object that would appeal to viewers.

Regarding Claim 14: McSheery as modified by DeMenthon and Rosser discloses the image tracking apparatus as claimed in claim 13. McSheery further discloses the optical identifier device comprising:

- A laser controller (Fig. 3, 300) for generating an electrical drive signal, said electrical drive signal including a unique identifier code (col. 10 lines 3-11). Each microprocessor (300) belongs to a module (Fig. 1, 102) and is responsible for generating an electrical signal (shown in Figure 3 by the arrows pointing

outwards from the microprocessor (300)). The electrical signal is a binary signal which outputs power to select LEDs (Fig. 3, 306, 310, and 314).

- A plurality of laser devices (LEDs, 306, 310, and 314), wherein said electrical drive signal including said unique identifier code modulates said laser devices and generates said optical identification signal (col. 14, lines 63-67). Switching the LEDs (306, 310, and 314) on and off causes a pulsating effect which represents an optical identification signal (Fig. 1, 104).

Regarding Claim 15: McSheery as modified by DeMenthon and Rosser discloses the image tracking apparatus as claimed in claim 14. McSheery further discloses the laser controller including:

- A modulation controller device (Fig. 3, 300) for receiving an enable signal and generating said electrical drive signal (col. 10 lines 3-13). The microprocessor (300) receives a signal from a power supply enabling it to generate an electrical drive signal when the power is on.
- A synchronization device (300) for generating said enable signal such that said electrical drive signal modulates said lasers (Fig. 3, 306, 310, and 314) in phase with said decoder device (Fig. 1, 130) receiving said optical identification signal within each of said optically filtered image frames (col. 15 lines 25-28). A controller (Fig. 1, 134) sends a synch signal to both the module (Fig. 1, 102) and the camera (Fig. 1, 108) containing the DSP (130) so that modulation can occur in phase with the detecting.

6. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over McSheery.

Regarding Claim 19: McSheery does not disclose a first optical signal being an image of the moving object at the same time a second optical signal is an image of the optical identification signal. Instead, McSheery discloses the image tracking apparatus as claimed in claim 18, wherein a first optical signal is said image of said moving object and a said optical signal is said optical identification signal (col. 11 lines 63-65). The optical signal produced by a camera (Fig. 1, 108) may be either an image of a moving object (Fig. 1, 102) or an optical identification signal (Fig. 1, 104). It is the latter only if an infrared band pass filter is used which McSheery discloses as optional. One camera may have this filter while another may not, therefore one camera may output an image of the moving object (102) while the other may output an identification signal (104). It would be obvious to one of ordinary skill in the art to combine McSheery's embodiments to superimpose the identifier information onto the moving object image.

Regarding Claim 20: McSheery does not disclose a series of images of the moving object and a series of images of the optical identification signal in the same embodiment. McSheery discloses the image tracking apparatus as claimed in claim 19, wherein a series of image frames are image frames of said moving object; and a series of image frames are optically filtered image frames of said optical identification signal (col. 14 lines 32-34). The optical signal produced by a camera (Fig. 1, 108) may be

either an image of a moving object (Fig. 1, 102) or an optical identification signal (Fig. 1, 104). It is the latter only if an infrared band pass filter is used which McSheery discloses as optional (col. 11 lines 63-65). One camera may have this filter while another may not, therefore one camera may output an image of the moving object (102) while the other may output an identification signal (104). It would be obvious to one of ordinary skill in the art to combine McSheery's embodiments to superimpose the identifier information onto the moving object image.

Regarding Claim 21: McSheery discloses the image tracking apparatus as claimed in claim 20, wherein said picture frame processing system includes a coordinate detector device, which receives said optically filtered image frames of said optical identification signal and generates an X and Y coordinate position signal for said optical identification signal within each of said optically filtered image frames (col. 28 lines 19-22). The controller (Fig. 1, 134) determines the 3D position of the optical identification signal or light (Fig. 1, 104) radiating from a light point (Fig. 1, 106). The optically filtered image frames produced by the cameras (Fig. 1, 108) are shown entering the controller (134) via serial signal paths (Fig. 1, 144 and 146). The controller (134) uses these frames in computing both X and Y coordinates as well as a Z coordinate.

7. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McSheery in view of DeMenthon.

Regarding Claim 22: McSheery discloses the image tracking apparatus as claimed in claim 21, but does not disclose the X and Y coordinates being averaged. However DeMenthon discloses the image tracking apparatus as claimed in claim 21, wherein said X coordinate position signal corresponds to a running average of X coordinate position values determined from each of said optically filtered image frames; and said Y coordinate position signal corresponds to a running average of Y coordinate position values within each of said optically filtered image frames (col. 11 lines 5-9). This modification would be obvious to one of ordinary skill in the art because both references pertain to the tracking of light sources attached to a moving object. One would be motivated to make this modification to provide more accurate coordinates of the position of the light sources to compensate for the cameras inability to focus the light onto just one pixel.

Regarding Claim 23: McSheery as modified by DeMenthon discloses the image tracking apparatus as claimed in claim 22. McSheery further discloses a picture frame processing system including a decoder, said decoder receiving said optical identification signal within each of said optically filtered image frames and generating an electrical decoder signal (col. 16 lines 17-26). The DSP (Fig. 1, 130) is responsible for decoding the ID. The DSP (130) receives each frame and when if finally determines the ID it generates an electrical signal to be sent to the controller (Fig. 1, 134).

Regarding Claim 24: McSheery as modified by DeMenthon discloses the image tracking apparatus as claimed in claim 23. McSheery further discloses a picture frame processing system including a graphics generator, said graphics generator receiving said electrical decoder signal and generating a graphic image containing information associated with said image of said moving object (col. 18 lines 18-28). The PC (Fig. 1, 138) with the use of graphics software acts as the graphics generator.

8. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over McSheery in view of DeMenthon as applied to claims 9-11 above, and further in view of Rosser.

Regarding Claim 25: McSheery as modified by DeMenthon discloses the image tracking apparatus as claimed in claim 24 which computes X and Y coordinates. However, neither reference includes a picture-in-picture processor. However, Rosser teaches a picture-in-picture processor which receives both said X and Y coordinate position signal and generates said coordinate position value (col. 8 line 68- col. 9 line 3). The image analyzer (Fig. 1, 17) acts as part of the picture-in-picture processor responsible for providing location information to an image synthesizer (Fig. 1, 20). It would be obvious to one of ordinary skill in the art to modify McSheery's PC (Fig. 1, 138) to include an image analyzer (17) to display the identifier information in a desired location. One would be motivated to make this modification for the purpose of adding advertisements, as is Rosser's motivation, or to provide information corresponding to

the moving object that would appeal to viewers with little depreciation to the image aesthetics.

Regarding Claim 26: McSheery as modified by DeMenthon and Rosser discloses the image tracking apparatus as claimed in claim 25. Rosser further discloses the picture-in-picture processor receiving said broadcast quality images of said moving object and said graphic image, and superimposes said graphic image on said broadcast quality images of said moving object at a position related to said coordinate position value (col. 6 line 65- col. 7 line 10). The image synthesizer (Fig. 1, 20) acts as part of the picture-in-picture processor responsible for adding a secondary source (Fig. 1, 27) to select portions of a main image (Fig 2, 11 and 13). It would be obvious to one of ordinary skill in the art to modify the PC (Fig. 1, 138) of McSheery to display the identifier information along with the image of the moving object. One would be motivated to make this modification to the graphics software for the purpose of adding advertisements, as is Rosser's motivation, or to provide information corresponding to the moving object that would appeal to viewers.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Honey et al. (PN 5,862,517) is cited for teaching the attachment of a laser to a moving object and the use of a camera to track the object.

- Amorai-Moriya et al. (PN 6,141,293) is cited for teaching the attachment of devices creating sound on a moving object and detecting this sound to track the moving object in a given area.
- Auty et al. (PN 5,974,158) is cited for teaching the detection and imaging of a moving aircraft with attached electromagnetic emitting devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig W Kronenthal whose telephone number is (703) 305-8696. The examiner can normally be reached on 8:00 am - 5:00 pm / Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 306-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CWK
10/21/04

MEHRDAD DASTOURI
PRIMARY EXAMINER
Mehrdad Dastouri